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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/691,406 | 10/22/2003 | Nobutoshi Asai | 09792909-5700 | 6827 |

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| EXAMINER | |
|---|---|
| KEANEY, ELIZABETH MARIE | |
| **ART UNIT** | **PAPER NUMBER** |
| 2882 | |

DATE MAILED: 06/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H.A

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/691,406 | ASAI ET AL. | |
| | Examiner | Art Unit | |
| | Elizabeth Keaney | 2882 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on 22 October 2003.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) 1-9 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-9 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 22 October 2003 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 5/13/05.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Priority*

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### *Information Disclosure Statement*

The information disclosure statement filed 13 May 2005 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered. The Japanese Patent Documents have not been provided and accordingly have not been considered.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1,2,5,7 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Mochizuki et al. (US Patent Application Publication 2002/0105267; hereinafter Mochizuki).

Re claim 1: Mochizuki discloses, in figures 4d and 6b and throughout the disclosure, a display unit, comprising:

- a plurality of light emitting devices (300) which generate lights for image display (page 1, paragraph 2, lines 3-5);
- a plurality of first prisms (140; page 3, paragraph 48, line 6) which are arranged corresponding to each light emitting device, and refract the lights for image display; and
- second prisms (130) which are at least embedded in voids formed between the first prisms, and which have a smaller refraction index than that of the first prism (page 3, paragraph 47, lines 4-6).

Re claim 2: Mochizuki discloses, in figures 4d and 6b and throughout the disclosure, a display unit wherein:

- nonluminescent spaces are provided between each light emitting device (page 3, paragraph 51, lines 1-3); and
- the first prism having an end face (141) which is positioned corresponding to the light emitting device (300) and two oblique faces which are positioned respectively corresponding to adjacent two nonluminescent spaces, and has a trapezoidal cross section wherein the end face is an upper base and the two oblique faces are oblique lines (page 3, paragraph 58, lines 9-10).

Re claim 5: Mochizuki discloses, in figure 6b and throughout the disclosure, a display unit further comprising:

- a support substrate (800) to support the light emitting devices; and
- a transparent substrate (150) which is arranged on the opposite side of the light emitting devices sandwiching the first and the second prisms, and which constructs emission paths to emit the lights for image display outside, wherein
    - o the first prisms have a function to bond the support substrate and the transparent substrate together (page 3, paragraph 59, lines 1-3), and function to seal the light emitting devices between the support substrate and the transparent substrate (page 2, paragraph 44, lines 10-13).

Re claim 7: Mochizuki discloses, in figure 3 and throughout the disclosure, the light emitting devices generating the lights for image display by utilizing organic light emitting phenomenon (110).

Re claim 8: Mochizuki discloses, in figure 3 and throughout the disclosure, the light emitting devices to include a light emitting layer (110) which generates the lights for image display and two electrode layers (100,120) sandwiching the light emitting layer, and has a resonator structure which makes the lights for image display generated in the

light emitting layer resonate between the two electrode layers (page 2, paragraph 45, line 3- paragraph 46, line 6).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mochizuki as applied to claim 1 above, and further in view of Hosokawa (US Patent Application Publication 2002/0063517).

Re claim 3: Mochizuki teaches all the limitations as shown above.

However, Mochizuki fails to teach or fairly suggest the display unit comprising optical filters arranged corresponding to each light-emitting device and selectively transmits the light for the image display.

Hosokawa teaches, in figure 8 and throughout the disclosure, a display unit comprising optical filters (84) arranged corresponding to each light-emitting device (81) and selectively transmits the light for the image display.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device disclosed by Mochizuki to include a color filter because it converts light emission into a desired color to produce a multicolor display.

Re claim 4: Mochizuki teaches all the limitations as shown above, including a first prism structure that encapsulates the light emitting device.

However, Mochizuki fails to teach or fairly suggest pigments included in the first prism whose colors correspond to the lights for image display and have a function to selectively transmit the lights for image display.

Hosokawa discloses mixing a pigment within an encapsulation structure to produce a color filter (page 7, paragraph 148).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to disperse color pigment within the first prism because it converts light emission into a desired color producing a multicolor display without any additional layers within the device.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mochizuki as applied to claim 1 above, and further in view of Shiotsuka et al. (US Patent 6,806,414; hereinafter Shiotsuka).

Mochizuki teaches all the limitations as shown above, including the use of a first prism layer which protects each light emitting device from the external environment (page 2, paragraph 44, lines 10-12).

However, Mochizuki fails to teach or fairly suggest the first prisms being made of a resin which has a water vapor permeability of 50 $g/m^2$ *24 hours or less.

Shiotsuka discloses the use of protection layer comprising a resin which has a water vapor permeability of 0.01-40 $g/m^2$ *24 hours or less.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the resin of Shiotsuka for that of Mochizuki because it better protects the light emitting devices from external water thereby preventing premature failure of the device.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Spencer et al. (US Patent 5,315,491; hereinafter Spencer).

Spencer discloses, in figure 15 and throughout the disclosure, a method of manufacturing a display unit, including the steps of:

- forming a prism precursor layer to form first prisms to cover a light emitting device (172) on a support substrate (182);
- pattern forming a plurality of second prisms (158) on a transparent substrate (150) ; and
- forming the first prisms by placing the support substrate and the transparent substrate opposite so that the prism precursor layer and the second prisms are placed opposite to each other, and then pressure bonding the transparent substrate to the support substrate and forming the prism precursor layer by utilizing a shape of the second prisms (column 12, lines 14-18).

However, Spencer fails to teach or fairly suggest a plurality of light emitting devices.

One of ordinary skill in the art would recognize the structure produced by the method disclosed by Spencer could be used within a image device wherein the image device comprises pixels or modules.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the structure disclosed by Spencer within a multi-pixel image device because it would allow for greater reflection per pixel and therefore an improvement in overall display brightness without increasing the power consumption.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- US Patents 6,787,976 and 6,898,018 disclose the current state of the art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth Keaney whose telephone number is (571)272-2489. The examiner can normally be reached on Monday-Thursday 5:30-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on (571)272-2490. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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EDWARD J. GLICK
SUPERVISORY PATENT EXAMINER